MONASH University
Business and Economics

BEST PRACTICE IN AUSTRALIAN MANUFACTURING SITES

Nicholas Beaumont

Working Paper 24/05
May 2005

DEPARTMENT OF MANAGEMENT
WORKING PAPER SERIES
I S S N 1 3 2 7 – 5 2 1 6

Abstract

This paper delineates the concept of Best Practice (BP); demonstrates that the practices of Australian manufactures subscribing to best practice are significantly different from those that do not; and determines whether components of best practice used by industry match components recognized by researchers. A search of the literature for definitions of BP and a statistical analysis of a survey completed by 962 Australian manufacturing sites were used.

Most definitions of BP comprise lists of components that vary significantly amongst authors and do not reflect strong theoretical bases but researchers and practitioners use roughly similar definitions. There are significant differences between the strategies and practices of Australian manufacturers that use BP and those that do not.

It is difficult to prove that BP causes superior performance. Internal efforts to improve performance may be masked by their lagged effects and events external to the organization. Superior performance might be caused by energetic management in part manifest in BP and other improvement programs. Nevertheless, having a BP program is strongly associated with traits such as proactivity, internal communication, training and leadership that should be commercially advantageous. Manufacturers should therefore consider implementing BP programs. This paper clarifies definitions of BP and conclusively demonstrates that the practices of Australian organizations subscribing to BP are significantly different from those that do not.

BEST PRACTICE IN AUSTRALIAN MANUFACTURING SITES

INTRODUCTION

This paper was motivated by the following research questions:

Do Australian manufacturers committed to Best Practice programs have strategies, manufacturing practices, manufacturing outcomes and business performances that are significantly different from those that are not?
What is Best Practice and do its definitions in the literature match Australian manufacturers' practices?

Relatively few writers have offered definitions of Best Practice (BP), perhaps because the term's meaning is ostensibly obvious. Almost all writers define it in terms of components (summarized in Table 1). More fundamental scrutiny of BP entails examining its definition, its implementation and criteria by which BP programs can be assessed. The following discussion draws especially on Fitz-enz (1993) and Davies & Kochhar (2002) who describe methodological difficulties.

Table 1 about here

Fitz-enz notes that BP is not unique, different practices can work well in different contexts, cultures and organisations. There are many ways of categorizing work; work resulting in tangible outputs is usually easier to manage and measure than intellectual work or work involving people (especially management); some work entails coping with an uncertain and/or changing environment in contrast to a stable, known environment. It may be possible to measure objectively a piece worker's performance but more difficult to measure objectively systems analysts' performances; the quality of their designs will not be known until the system based on it has been implemented and praise or blame must be shared amongst many people. Performance might be more properly attributed to a team than to individuals.

Fundamentally different production technologies require different assessment criteria (Thompson, 1967) and best practices. Assembly-line workers cannot excel but can fail by falling behind the line; their performance criteria are different from those of sales representatives or academics. Authoritarian managerial practices may work on the factory floor where technology is simple and output easily measured, but not when applied to managing a complex computer project. BP may vary with the kind of work being done, supporting technology and the experience of the work force.

It may be difficult to assess work efficiency. Benchmarking against comparable departments or organisations is often recommended (Linsenmeyer et al., 1991) but competitors may not cooperate and comparisons may be complicated by differences in supplier relationships and capital equipment. Intangible measures of performance tend to be overlooked but may be very important. The development of pervasive quality programs or long term relationships with customers may be valuable long-term investments.

Financial measures of performance may be distorted by inappropriate transfer prices or the way overheads such as depreciation are distributed amongst time periods or departments. Assessment of a unit's performance may be affected by external and transitory factors (about half the "excellent" companies identified by (Waterman & Peters, 1982) have since suffered major reversals) or just luck. A new project team may be enthused and energetic for its first two years but then degenerate. An improvement initiative may yield improved performance after a lag of two or three years (Davies & Kochhar, 2002, p 296) and worsen current performance (Repenning & Sterman, 2001).

These problems create methodological difficulties: some astonishing "proofs" of BP efficacy are based on small samples (Fitz-enz, 1993). The improvement of performance after the implementation of BP does not prove that the latter caused the former. A firm may be consistently successful, not because it uses BP, but because it has intrinsic advantages such as economies of scale, some kind of monopoly power, or effective management. BP programs may seem effective because they are one of several initiatives introduced by effective managers – good performance may be fundamentally attributable to energetic management, not to BP or other improvement programs.

There is potential conflict between some of the often-cited components of BP. Enhanced managerial leadership may conflict with devolution of responsibility onto autonomous work groups (Rimmer, 1996, p 21). Flexibility is not usually free but comes from investing in multi-skilling, more able staff, better scheduling systems and/or more sophisticated machinery. There is normally a play-off between efficiency and flexibility (Thompson, 1967); running a factory at near capacity makes scheduling rush jobs difficult.

The cozy assumption that companies should operate in the interest of a wider community (employees, customers, minority groups and the public as well as shareholders) and be environmentally responsible may generate conflict amongst stakeholders and compromise performance. Wright and Lund (1996) show how managers used computer technology to measure, change, and accelerate the work of warehouse operators.

Definitions of Best Practice

Explicit definitions of BP are rare. The definition used by those collecting the data used was:

> Best Practice is the co-operative way in which firms and their employees undertake business activities in all key processes: leadership, planning, customers, suppliers, community relations, production and supply of products and services, and the use of benchmarking. These practices, when effectively linked together, can be expected to lead to sustainable world-class outcomes in quality and customer service, flexibility, timeliness, innovation, cost and competitiveness (AMC, 1994).

Other definitions are:

> Best Practice "…*will lead to the superior performance of a company*." (Camp, 1989) and is "*the best way is to perform a business process*" (Heibeler, Kelly, & Ketteman, 1988).

Note that these definitions express best practice in terms of its effects; tautologically guaranteeing that implementing BP will improve performance; but give no clue as to BP's content. Many authors define BP in terms of lists of components such as those summarized in Table 2. The relatively few papers on BP in a manufacturing context are summarized here.

(Taninecz, 1997), analysing a census of US manufacturers, stresses the importance of employee empowerment and flexibility. He notes that changes in practices had not resulted in productivity improvement or cost reduction, suggesting that this might be explained by increased product complexity. It should be stressed that, in a competitive market, the fruit of any improvement is not wholly retained by the organization, but shared with customers.

Voss (1995) discusses BP's treatment as a strategic paradigm, asserting that it has "become prominent in manufacturing strategy". He points to research showing "strong links between adoption of BP and operating performance", hints that adopting BP in isolated applications (islands) in the factory is unlikely to be effective, opines that firms with BP experience are more likely to continue improving than those without and notes that improvement programs should be aligned with strategy.

Pilkington, notes the sequence of paradigms (TQM, BPR etc) purportedly facilitating manufacturing excellence and points out that Japanese automotive manufacturers' neither have uniform approaches nor are universally successful and that their approaches (exemplified by BP) are aligned with strategy. British imitators of Japanese models have not obtained anticipated competitive advantage partly because the imported models are not well understood and partly through failure to adopt approaches aligned with strategy.

Golovin (1996) treats BP as a tool for ensuring customer satisfaction. Griffin (1995) also stresses customer satisfaction and identifies (only??) four BP firms. He highlights staff training, staff participation, measurement and the need to relate operating practices to corporate objectives. An acid test is "Can a worker terrified of managerial retribution (reprimand or firing) if he or she identifies a product flaw or problem in the field feel secure enough to correct the fault and ensure (Abdul-Gader & Kozar) it does not recur?"

Morton (1994) stresses that modern factories processes information (used for scheduling and reordering) as well as metal. The ability to store and test digital instead of metal prototypes can increase flexibility and greatly reduce costs; digital designs can be translated into routing tables with little or no human intervention. The importance of information and its processing is not explicit in the survey (AMC, 1994, pp 85-103) underlying this paper, but is perhaps implicit in topics such as planning, benchmarking and Just in Time.

Several authors have tried to find factors underlying Total Quality Management (TQM) (which has some elements in common with BP) by applying factor analysis to survey data (Ahire, Golhar, & Waller, 1996; Black & Porter, 1996; Dow, Samson, & Ford, 1999; Kadipasaoglu, Hurley, Foote, & Khumawala, 1998; Koufteros, 1999; Leonidou, 1998; Mukherjee, Lapre, & Van Wassenhove, 1998; Samson & Terziovski, 1999; Saraph, Benson, & Schroeder, 1989). These studies are difficult to compare because they differ in (or do not state) the population sampled; sample size; treatment of missing values; selection of items for inclusion in factor analysis; methods of factorization (orthogonal or oblique and whether items are grouped or aggregated prior to analysis); number and description of factors found; whether these factors are related to measures of performance and (if so) the proportion of variance in performance explained. Different authors have found different numbers of differently labeled factors underlying TQM.

Many, often laudatory, articles describe BP cases in manufacturing (Bredin, Fletcher, Gee, & McClenahen, 1995; Rogers, 1998). Shapiro (1995) notes that managerial paradigms regularly come into and fall out of fashion and entertainingly characterizes BP and other paradigms as consultant enrichment procedures.

Definitions of BP that comprise lists of components that differ amongst authors is unsatisfying. The components should at least be organized by classifying them in various ways, for example, as pertaining to internal and external activities (relations with customers and suppliers); to direct and indirect activities; or to people and processes.

In the manufacturing context, BP can be interpreted as a mechanism for helping to express and implement a manufacturing strategy (Ketokivi & Schroeder, 2004). Dilworth (1993, p58) opines that choosing a manufacturing strategy entails choosing the weights or emphases to be placed on cost efficiency, flexibility, product quality and service (dependability and timeliness). The best practices should be chosen by a firm to support its chosen strategy. Motivated by the idea that the factory must be considered in strategic context and the analogy with computer-integrated manufacturing, we identify three aspects of BP:

Operational Best Practice: optimizes operations on the factory floor. The objectives are usually tangible and include direct cost minimization, quality and on-time delivery.

Internal Best Practice: optimizes the manufacturer's structure, staffing, systems and culture so that manufacturing strategy is optimally expressed. If, for example, customer service is emphasized,

customers will be able to order through web pages, these orders will be made available to factory schedulers instantly, there will be sophisticated scheduling and order tracking systems; and flexible manufacturing systems.

External Best Practice: (a) Optimizes relations with external parties, especially customers and suppliers. (b) Obtains required resources (e.g. raw materials and labour) on the best possible terms and conditions. (c) Sells finished goods on the best possible terms and conditions.

THE SURVEY AND METHODOLOGY

The Survey Data

In 1994, the Australian Manufacturing Council (AMC) completed a survey of Australian and New Zealand manufacturing *sites* with at least 20 employees (AMC, 1994) only the Australian data were available to the author. The survey was designed to determine the extent and effectiveness of BP amongst Australasian manufacturers. The sample was large (3000 forms were posted to Australian manufacturing sites drawn randomly from data held by the Australian Bureau of Statistics and 962 or 32% responded). The sample was stratified by industry sector and site size (each cell containing at least 15 responses). A telephone survey of 108 non-responding sites indicated that they were little different from responding sites. There was no evidence of "respondent fatigue" (answering later questions mechanically) or "respondent inattention" (informants failing to notice a change in the questionnaire's requirements) (Ergas & Wright, 1994). Three follow-up visits were conducted at each of 44 sites, in part to validate responses (AMC, 1994, pp. 78-79).

Most of the 275 questions invited answers on a five-point ordinal scale anchored by phrases such as "strongly disagree" and “strongly agree". The survey sought data on many components of Manufacturing Strategy, Manufacturing Practice, Performance Outcomes and Business Performance; the components of these are given in Table 2. Some questions (such as those on barriers to improvement and use of teams) inappropriately appeared amongst questions on outcomes, such questions were treated as pertaining to manufacturing practices.

Table 2 about here

RESEARCH QUESTIONS AND STATISTICAL ANALYSIS

This section describes the preliminary data analysis performed and, for each of the research questions listed below, the hypotheses through which the research question was expressed, the statistical methods used and the results obtained.

Research Question 1

Do firms committed to a Best Practice program have manufacturing strategies manufacturing practices manufacturing outcomes that are significantly different from firms that are not committed? It was hypothesised that:

H1: Components of BP (Table 2) are as common in firms claiming to have a BP program as those that do not.

Preliminary analysis of data

Most of the questions relevant to Hypothesis 1 asked for ordinal data, a few asked for interval data, in some questions ranges of ratio measurements (e.g. 2.00% to 5.00%) were coded as small integers. Replacing the small integers by the midpoints of the ranges made no substantial difference to the tests applied in this section.

Initially, Mann-Whitney tests (with $\alpha = 0.01$) were used (because the data are ordinal) to determine whether there were differences between BP and non-BP sites in their responses to each of the 204 questions relevant to H1. The categorization question was: "Has your site embarked on a program aimed specifically at achieving Best Practice" (670, 275 and 17 "Yes", "No" and missing responses respectively). The number of questions for which there were differences significant at $p = .0000$, $.0001 <= p <= .0009$, and $.001 <= p <= .009$ were respectively 68, 18, and 30.

This procedure compounds the experimental error, with $\alpha = 0.01$, there is an 87% chance of obtaining at least one false positive and the expected number of false positives is 2.04. It was decided to accept this risk because: (a) Many of the significance figures obtained by the Mann-Whitney tests were much lower than $\alpha = .01$. (b) The compounding is lessened by the existence of moderate correlation amongst responses, especially for questions pertaining to the same component (e.g. leadership). (c) If MANOVA had been used on large groups of questions, its power would be lessened because missing values would greatly reduce the number of informants considered. Replacing missing values by the means would have made statistical conclusions less reliable.

Some of the most statistically significant differences between BP and non-BP sites are discussed in Table 3 and Table 4 lists some of the survey questions with the most significant differences (some results from groups of similar questions are suppressed); z (standardized differences) values are given, all listed differences were significant with $p = 0.0000$. The differences were of practical significance, not merely statistical artifacts (see Table 4). It is clear that H1 was very strongly rejected; there are many very significant differences between BP and non-BP sites.

Tables 3 and 4 about here

Research Question 2

Research question 2 was "*What is Best Practice and do its definitions in the literature match manufacturers' practices?"* This question was investigated by examining definitions in the literature, identifying elements common to most authors' definitions and determining whether, in the sample, those elements were significantly more common amongst sites claiming to have BP programs. The literature and practice are summarized in Tables 5 and 6; their comparison is summarized in 7. It was hypothesized that:

H2: The components of Best Practice used by sites that have adopted formal Best Practice programs match the components of Best Practice identified in Table 1.

The test is incomplete; some aspects of BP proposed by writers were not measured in the survey. The frequency of use of all the components of BP in Table 1 (except flexibility and the use of technology) differed significantly between BP and non-BP sites (see Table 3).

Table 5 about here

The technology component of BP was not statistically supported, there were relatively few users of most kinds of technology. There was no statistical support for flexibility because it was not explicitly asked for; it is perhaps implicit in questions such as "Senior managers encourage change...". A strong difference between BP and non-BP sites explicit in the survey but not in the literature is "Planning and fostering relations with all stakeholders" (not just customers and suppliers). The substantial coincidence between the literature and the survey in other components of BP suggests that, except for technology, flexibility and relations with all stakeholders, Hypothesis 2 should be rejected.

CONCLUSIONS AND SUGGESTED FURTHER RESEARCH

Summary

This paper examines definitions of BP advanced in the literature, and used a large survey of Australian manufacturing sites to verify that there are very significant statistical differences between sites that subscribe to BP and those that do not. Best Practice is almost always defined as a list of components. Most of the significant differences found accord with generally accepted definitions of BP.

Limitations

There are many limitations to studies based on survey data. The informants were executives who probably have a biased view of their own and their organisations' performances and practices and may not have at hand the information requested. They may not be motivated to respond conscientiously to surveys. There may be systemic bias, busy executives or executives of poorly performing firms may be reluctant participants. The effective sample size may be smaller than 962 because sites with common ownership may not be independent. A separate project's interviews suggest that entrepreneurs are less tolerant of researchers than managers of large public companies. The survey did not ask about some relevant topics such as the competitive climate and attitudes to change.

Further Research

The research described in this paper continues. Factor analysis has been used to reduce the number of variables to a more manageable number and have used regressions based on factors to (weakly) relate components of Best Practice to sites' performances. Relating site use of BP to performance is impeded by about half of the answers to some performance questions being missing and responses being coded very coarsely (to retain confidentiality). We want to find whether the use of BP and site performance vary significantly with companies' demographics, for example with company size, industry sector, ownership (public or private, domestic or foreign) and degree of unionization.

Australian manufacturing has evolved since 1993, propelled by governments' implementations of free market philosophies, it has become more globally oriented. New technologies, especially those pertaining to telecommunications and the internet, have had myriad effects on organizations; they accelerate processes and make national boundaries less relevant. Such technologies have facilitated use of outsourcing. Outsourcing has many possible effects: e.g. it reduces the range of skills manufacturers require in-house and thereby allows greater focus on their core activities. For these reasons, another survey would be appropriate.

Table 1: Components of Best Practice

Component	Authors and comment
A focus on continuous, simultaneous improvement in cost, quality, and delivery.	(ADIR, 1995; AMC, 1994; Davis, 1995; Dertouzos, 1990; Ewer, 1993). Golovin (1996) uses the terms "BP in compliance" (with product specifications) and "BP in improvement" (signifying continuous improvement). Taninecz (1997) and Griffin (1995) emphasise measurement and comparison with quantified objectives.
Closer links with suppliers and customers.	(ADIR, 1995; Davis, 1995; Dertouzos, 1990; Ewer, 1993; Griffin et al., 1995; Taninecz, 1997)
Effective use of technology for strategic advantage.	(ADIR, 1995; Davis, 1995; Dertouzos, 1990; Ewer, 1993). Taninecz (1997) notes technological links such as EDI with customers and suppliers.
Flatter organisation structures, greater flexibility and preparedness to adopt structures and processes to changed circumstances.	(ADIR, 1995; Davis, 1995; Dertouzos, 1990; Ewer, 1993).
Human resource policies promoting continuous learning, teamwork, participation and flexibility.	(Davis, 1995; Dertouzos, 1990; Ewer, 1993), (AMC, 1994; Griffin et al., 1995; Taninecz, 1997). (ADIR, 1995) (mentions training programs).
Comparison of performance with similar firms.	Voss (1995) states that BP leads to World Class manufacturing (WMC). Lower barriers to international trade imply that firms are obliged to compete with and compare themselves with foreign as well as domestic firms (Davis, 1995).
Managerial leadership	(ADIR, 1995; AMC, 1994).

Table 2: Components of Manufacturing Best Practice

Element	Components
Manufacturing Strategy	Planning, manufacturing structure, factory operations
Manufacturing Practice	Leadership, management of people, customer focus, quality of process and product, benchmarking, technology
Manufacturing Outcomes	Cost, quality, flexibility, timeliness, innovation, barriers, teams, competitiveness
Business Performance	Sales, exports, employment, market share, cashflow

Table 3: Statistically significant differences between BP and Non-BP firms

Aspect	Significant differences
Manufacturing Strategy	BP sites are far more likely to have a mission statement and a planning process that incorporates stakeholders such as customers and suppliers. They regularly review customer' complaints, costs of accidents, poor quality, downtime and cost structures. Leadership and employee relationships are considered important. BP sites perceive themselves as having comparative advantages in production planning, quality procedures and marketing capabilities, but think that they are attempting too many simultaneous improvement projects. BP sites use self-supporting and autonomous teams and statistical process control.
Manufacturing Practice	BP sites have leadership that encourages change, improvement, involvement and unity. BP sites are ostensibly much more concerned with their employees: for example, their training, safety, education and communication with superiors and subordinates. BP sites are much more likely to use incentive payments. BP sites have strong customer focus: customers' present and future requirements are ascertained, customer satisfaction is measured; there are dispute resolution procedures and customer input during design. Especially when working with suppliers, BP sites emphasise product and process quality. They have quality procedures and cultures and are much more likely to have ISO certification. Major customers monitor their manufacturing processes. There are no significant differences in the use of manufacturing technologies (robotics, computer aided design etc) except that BP firms are much more likely to use statistical process control and TQM (but not JIT). BP sites are much more likely to practise benchmarking (especially to analyse costs, quality and operations processes), technology, customer service and labour utilisation. They compare their performances with like and unlike sites in Australia and overseas and with customers and suppliers.
Manufacturing Outcomes	There was no significant difference in production costs between BP and non-BP sites. However, BP sites have more sales from new products, work their factories longer hours and have less downtime. Non-BP sites are more likely to recognise a lack of senior managerial talent and ignorance of BP as obstacles to achieving better performance. BP sites are more likely to recognise currency fluctuations as impediments, possibly because they export more. BP sites spend much more on R&D and employee training. They are far more likely to use improvement/problem solving teams, self-managing teams and quality circles. BP sites invest more in induction and continuing training.
Business Performance	BP sites had significantly larger sales in each of the three years 90-91, 91-92 and 92-93. Export sales were not significantly different. BP sites had significantly more full-time employees. These differences may simply indicate that large sites are more likely to have BP programs.

Table 4: Some statistical differences between BP and non-BP firms

Question	t-statistic
PL3 Our plans focus on the achievement of Best Practice.	16.570
LE1 Senior Managers actively encourage change, trust and commitment.	10.264
PL1 We have a mission statement which has been communicated throughout the company.	9.177
LE3 Champions of change are effectively used to drive Best Practice.	9.089
PE4 Employee satisfaction is formally and regularly measured.	8.994
PL8h How often do you review the cost and number of workplace accidents?	8.672
PL2 We have a comprehensive & structured planning process	8.492
PL5 We have a written statement of strategy.	8.445
PL4 We always incorporate customer requirements, supplier capabilities and the needs of other stakeholders in the planning process.	7.864
CF7 We systematically and regularly measure external customer satisfaction.	7.404
PL8c How often do you review the number of customer complaints?	7.377
P08i What is the proportion of production operators involved in quality circles?	7.346
PE2 We have an organisation-wide training and development process for all our employees.	7.288
PE1 Concept of the internal customer is well understood at this site.	7.254
TEla Computer-aided design and/or computer aided engineering are used at this site	7.176
P09a2 Customer or clients have been valuables sources of advice for Best Practice.	6.934
QP6 We have site-wide standardised and documented operating procedures.	6.733
F02 Our work teams incorporate all support functions and are responsible for their own scheduling, budgeting and purchasing.	6.635
LE4 We proactively pursue continuous improvement rather than react to crises.	6.412
P08g The proportion of production operators involved in process improvement or problem solving teams is.	6.406
LE5 Ideas from production operators are actively used in assisting management.	6.224

Table 5: Comparison of Best Practice Theory and Practice

BP theory	Elements of practice supported by survey responses
A focus on continuous, simultaneous improvement in cost, quality and delivery.	Monitoring of cost, quality and delivery times and pursuit of continuous improvement
Closer links with suppliers and customers.	Customer requirement and supplier capabilities are always considered in planning. Customer requirement are incorporated in new designs, there are systems for handling customer complaints and customer satisfaction is measured. There are strong links with suppliers, these are manifest in product development and quality monitoring
Effective use of technology for strategic advantage.	No supported except for TQM
Flatter organisation structures, flexibility and preparedness to adopt new structures and processes.	BP sites have fewer levels of management. Flexibility was not tested. Senior managers greater in BP sites were better able to implement change.
Human resource policies promoting continuous learning, teamwork, participation and flexibility.	BP firms espouse participation, spend much more on training and are far more likely to use teams.
Comparison one's performance with similar firms.	BP firms are far more likely to use benchmarking.
Managerial leadership	Leadership is much more manifest in BP organisations.

REFERENCES

Abdul-Gader, A., & Kozar, K. (1996). The impact of computer alienation on information technology investment decisions: An exploratory cross-national analysis. MIS Quarterly, 1995(19), 4.

Ahire, S. L., Golhar, D. Y., & Waller, M. A. (1996). Development and validation of TQM implementation constructs. Decision Sciences, 27(1), 23-56.

Australian Department of Industrial Relations. (1995). Best practice in action. Canberra, ACT,Australia.: Department of Industrial Relations.

Australian Manufacturing Council. (1994). Leading the Way: A study of best manufacturing practices in Australia and New Zealand. Melbourne: Australian Manufacturing Council.

Black, S. A., & Porter, L. J. (1996). Identification of the critical factors of TQM. Decision Sciences, 27(1), 1-21.

Bredin, J., Fletcher, P., Gee, J., & McClenahen, J. S. (1995). Europe's best practices. Industry Week, 244(18), 66-70.

Camp, R. C. (1989). Benchmarking: the search for industry best practices that lead to superior performance. Milwaukee, Wis.: Quality Press; Quality Resources.

Davies, A. J., & Kochhar, A. K. (2002). Manufacturing best practice and performance studies: A critique. International Journal of Operations & Production Management, 22(3), 289.

Davis, F. E. (1995). Best practice awareness: workplace reform, quality management, getting started in quality. Cabarita, N.S.W.: Rollocorp.

Dertouzos, M. L. (1990). Made in America: regaining the productivity edge. New York: Harper Perennial.

Dilworth, J. B. (1993). Production and Operations Management; Manufacturing and Services (5th ed.). New York: McGraw-Hill.

Dow, D., Samson, D., & Ford, S. (1999). Exploding the myth: Do all quality management practices contribute to superior quality performance? Productiion and Operations Management, 8(1), 1-27.

Ergas, H., & Wright, M. (1994). Internationalism, firm conduct and productivity. Paper presented at the International integration of the Australian economy, H.C. Coombs Centre for Financial Studies, Kirribilli, 11-12 July, 1994.

Ewer, P. (1993). International best practice? A critical guide. Leichhardt, N.S.W: Pluto Press.

Fitz-enz, J. (1993). The truth about "best practice". Human Resource Planning, 16(3), 19-26.

Golovin, J. (1996). 'Best practice makes perfect. Manufacturing Systems, 14(4), 74-75.

Griffin, A., Gleason, G., Preiss, R., & Shevenaugh, D. (1995). Best practice for customer satisfaction in manufacturing firms. Sloan Management Review, 36(2), 87-98.

Heibeler, R., Kelly, T. B., & Ketteman, C. (1988). best practices - building your business with customer-focused solutions. New York, NY: Simon & Schuster.

Kadipasaoglu, S. N., Hurley, S. F., Foote, J. L., & Khumawala, B. M. (1998). An investigation of the relationship between global manufacturing practices and outcomes in machine tools and textile industries. Journal of Operations Management, 16(2,3), 291-299.

Ketokivi, M., & Schroeder, R. (2004). Manufacturing practices, strategic fit and performance: A routine-based view. International Journal of Operations & Production Management, 24(2), 171-191.

Koufteros, X. A. (1999). Testing a model of pull production: A paradigm for manufacturing research using structural equation modeling. Journal of Operations Management, 17(4), 467-488.

Leonidou, L. (1998). Factors stimulating export business: An emperical investigation. Journal of

Applied Business Research, 14(2), 43-68.

Linsenmeyer, A., Ozanian, M. K., McGough, R., Baldo, A., Dubashi, J., & Biesada, A. (1991). Fad or Fundamental?; Best Practice Companies. Financial World, 160(19), 34-47.

Morton, O. (1994, 5-11 March 1994). Between two worlds: a survey of manufacturing technology. The Economist, 330, after p 62.

Mukherjee, A. S., Lapre, M. A., & Van Wassenhove, L. N. (1998). Knowledge driven quality improvement. Management Science, 44(11 (Part 2)), S35-S49.

Pilkington, A. (1998). Manufacturing strategy regained: Evidence for the demise of best-practice. California Management Review, 41(1), 31-42.

Repenning, N. P., & Sterman, J. D. (2001). Nobody ever gets credit for fixing problems that never happenned: Creating and sustaining process improvement. California Management Review,, 43(4), 64-88.

Rimmer, M. (1996). Reinventing competitiveness: Achieving best practice in Australia. South Melbourne,: Pitman.

Rogers, H. (1998). Benchmarking your plant against TQM best-practices plants. Quality Progress, 31(5), 51-55.

Samson, D., & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. Journal of Operations Management, 17(4), 393-409.

Saraph, J. V., Benson, P. G., & Schroeder, R. G. (1989). An Instrument for Measuring the Critical Factors of Quality Management. Decision Sciences, 20(4), 810-829.

Shapiro, E. C. (1995). Fad Surfing in the Boardroom. Sydney: Harper Collins.

Taninecz, G. (1997). Best practices & performances. Industry Week, 246(22), 28-43.

Thompson, J. D. (1967). Organizations in action: Social science bases of administrative theory. New York: McGraw-Hill,.

Voss, C. A. (1995). Alternative paradigms for manufacturing strategy. International Journal of Operations & Production Management, 15(4), 5-16.

Waterman, R. H., & Peters, T. (1982). In search of excellence: Lessons from America's best run companies. New York: Harper and Row.

Wright, C., & Lund, J. (1996). Best-Practice Taylorism: 'Yankee Speed-Up' in Australian Grocery Distribution. Journal of Industrial Relations, 38(2), 196-212.